

ASL

WINTER NEWSLETTER 2014





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Editor: Samantha Capon
s.capon@griffith.edu.au

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President's report

ASL is proud to have hosted the recent launch of the second edition of *Australian Freshwater Ecology: Processes and Management* at the 2014 Congress. All six authors (Boulton, Brock, Robson, Ryder, Chambers & Davis) were there to celebrate (and heave a sigh of relief). ASL generously supported the production of figures for the book and the author group recently wrote to Richard Marchant offering thanks to the Society for its support. By way of something more tangible, ASL members are entitled to a discount on the purchase price of the book (thanks to our publishers Wiley-Blackwell).

Our conference destination for next year will be the north Island of New Zealand, for a joint congress with NZFSS. I will publish further details in the newsletter once I have them. Professor Peter Gell and his colleagues at Federation University in Ballarat have generously offered to host ASL in 2016. The university has a new conference centre and Ballarat is well served by air and rail connections.

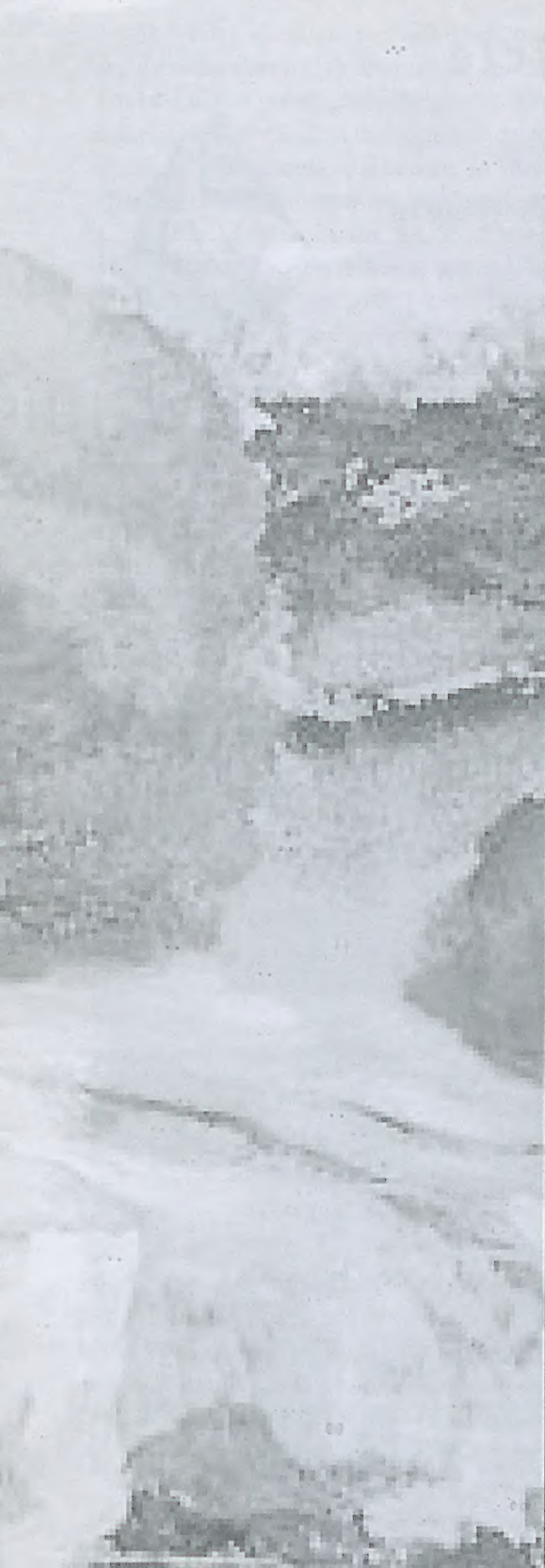
At our recent teleconference the executive discussed the value of continuing with our membership of Science and Technology Australia and resolved to write to STA to express our concerns that we are not getting tangible value from the membership. I have since written to STA and I hope to have their reply for the AGM. More recently, the Australian Academy of Science has contacted ASL asking if we would participate in the

newly established National Committee for Ecology, Evolution and Conservation. The executive has responded by requesting a seat on the committee, as it does not appear that there is any representation of freshwater ecosystems, species or issues on this committee. Once I have heard back I will let members know more about the purpose of the committee and ASLs involvement.

Lastly I would like to remind all members that ASL makes funds available for state-based activities. Some states, such as Tasmania, have maintained regular seminars and meetings each year and other states have organised particular annual functions. However, requests seem to have slowed down and some states are not using their funding allocation. If you would like to organize an activity for members in your state, please contact your representative on the executive (listed at the back of the newsletter and on the website).

So, with much to look forward to I wish everyone the best for a healthy winter,

Belinda Robson



from the editor...

A brief and belated newsletter this winter as the chill sets in and another year begins to drown. Thank-you to everyone who has contributed submissions both for this issue and those previously for which I have been Editor. I now look forward to handing the reins to a new editor and joining the ranks who enjoy their quarterly dose of ASL news. Such is the pace of life.

All the best,

Sam

NEWSLETTER EDITOR:

Dr Samantha Capon

Griffith University

s.capon@griffith.edu.au

DEPUTY EDITORS:

Sarah Mika

(University of New England)

Dianne Conrick

(Consultant)

Contributed article

A New Generation of Black Box Emerging in the Lower Murray

Dr Anne Jensen

Environmental Consultant and Volunteer member of
Water for Nature Committee



'Is black box going extinct?' That was the title of a special session at the ASL congress in December 2013. The shared stories highlighted the lack of regeneration in the mid-Murray Darling Basin, and threw the spotlight on the value of vigorous black box regeneration occurring at a series of sites in the regulated Lower Murray, triggered by the flood peak of 93,000 ML/d in February 2011.

Amy George's PhD research concluded that black box regeneration in the South Australian Riverland is associated with river flows >80,000 ML/d combined with annual rainfall >300 mm. These conditions occurred in 2011, and by 2013, as hypothesised, a dense field of thriving black box seedlings had emerged from the understorey, along with river red gum and lignum seedlings at lower elevations.

River red gum, black box and lignum all have aerial seedbanks, and rely on releasing mass volumes of seed to optimise the chance of landing on moist soil, to allow the seed to germinate immediately before being harvested by ants and other insects. Serial flood peaks from September

2010 to April 2012 provided suitable conditions for river red gum seedling germination at lower elevations on the floodplain. Lignum responded similarly, with both seedlings and vegetative clones appearing in the largest germination event since the floods of the early 1990s. But it was the highest peak in 2011 which promoted black box germination.

The black box seedlings are growing wherever the 2011 peak reached mature black box communities on the floodplain, at medium elevations. Looking around the region, it seems that almost none of the black box regeneration observed after the 1990s floods on the Chowilla floodplain has survived, except for a small community along the Ral Ral Creek anabranch upstream of Renmark. One patch of ~10 ha of black box regeneration from the 1970s floods is doing well at Clarks Floodplain between Berri and Loxton. More extensive black box regeneration survives from the 1950s floods, for example along Burra Creek at Morgan and Emu Gully near Cadell, and near Coppermine Waterhole at Chowilla.

The next question is: 'will the 2011 regenerants survive to maturity?' In the Lock4-Loxton reach, seedlings on the eastern bank are within the zone protected by salinity interception schemes, so their chances of survival may be improved. At a number of sites in the SA Riverland, environmental water is being applied by Water for Nature (an initiative of Nature Foundation SA), with the aim of improving survival rates through the first two summer periods after germination. Nature has been helping with above-average rainfall in summer, and the floodplain vegetation is at its healthiest since the floods of the early 1990s. Dense healthy groundcover species blanket the soil surface, and formerly stressed trees are gradually returning to healthy natural growth from the tips.

At Clarks Floodplain, just downstream of Lock 4 at Bookpurnong, formerly stressed mature black box trees have healthy bud crops, promising healthy seed volumes for summer 2014. Red gum saplings which generated in the first 2004 Living Murray watering at this site now have mature fruit which will shed its first seed in summer 2014 (attaining maturity at the minimum age of the expected range of 10-20 years).

The natural process of regeneration is working – it is now a case of watching to see if it culminates in successful recruitment of the next generation. The progress and survival of the black box seedlings of the Lower Murray floodplain will be watched closely.



Black box seedlings germinated in 2011 are now 80-100 cm tall at Thiele Flat near Loxton in the Lower Murray floodplain (Photo: Anne Jensen)

Minutes from ASL Executive Teleconference

24 March 2014

Present: B. Robson, R. Marchant, E. Garcia, A. Steward, C. Bartholomaeus, S. Strachan, B. Downes, F. Sheldon, D. Ryder, T. Mackintosh, G. Dunkerley, J. Moir (ASN).

Apologies: R. Lester, E. Harrison, S. Hatton, S. Capon.

1. Darwin Congress: Jacqui Moir (ASN) reported that the organisation of the joint ASL-ASFB congress to be held in early July was going smoothly. A web site providing all details is available, including a proposed programme of events. Abstracts are being submitted (25 so far) but many more are expected before the deadline on 31 March. Approximately \$80,000 in sponsorship has been raised and all venues for social events during the meeting have been booked. Jacqui will send a flyer to the executive so that they can publicise the congress to their colleagues.

2. Indigenous Travel Awards: Teresa Mackintosh spoke about a new initiative to encourage indigenous students at Australian universities, conducting limnological research, to attend ASL meetings. She suggested that such students could be awarded a travel award, similar to the current student travel award, and based on the same selection criteria. There was some discussion about this proposal and it was agreed that any such award should be based on the same criteria as the current travel award and that one such award

should be made this year to gauge interest. If interest grows, then the ASL should consider awarding more such awards and consider offering them to non-students as well as students. To enable non-students to apply new criteria would probably be needed. The section on the website about student travel awards will be modified to include the indigenous travel awards.

3. Student prizes: Belinda Robson asked about preparations for student judging at the Darwin meeting. This has yet to be organised but will be addressed by the local organising committee very soon. As both ASL and ASFB award prizes it seems best to keep deliberations about these separate; however, this policy may change.

4. NZ congress: no information is currently available about the joint ASL-NZFSS congress proposed for 2015. The ASL has also not received any expressions of interest for holding the 2016 congress; however, it will be suggested at the Darwin AGM that the congress in 2016 should be held in southern Australia at a location which can be reached cheaply.

6. Nominations for the ASL medal and the Early Career Award (ECR): nominations for both awards are still active from last year. Belinda Robson asked the executive to solicit more nominations, with a deadline at the end of April. Belinda agreed to chair the medal committee and Fran Sheldon the ECR committee.

7. Science and Technology Australia (STA): this lobby group wrote to Darren Ryder when he was president asking for suggestions to improve communication between STA and its constituent societies. Darren and others suggested the formation of an ecological group of societies. Such a group was subsequently formed but did not include the ASL. Belinda and Darren will follow this up with STA. Belinda will also consider writing to STA asking exactly what they do for ASL.

8. Communique from the Coal Seam Gas and Coal Mining workshop held in NSW in 2013: Gillian Dunkerley, who organised this workshop on behalf of ASL,

sought permission from the executive to publish the communique (which had been emailed to the executive) in the newsletter and on the website. This was granted. She also suggested that some of the powerpoint presentations from the workshop might also be available via a link on the website.

9. NSW limnological activities in 2014: Gillian Dunkerley indicated she wished to hold a half day workshop at UTS, probably in May, to enable some of those presenting talks at the Darwin congress to give their talk to interested ASL members who may not be going to the congress. She also proposed to hold another workshop well after the Darwin congress in northern NSW, possibly at UNE; no topic was discussed.

10. Newsletter editor: Sam Capon wishes to step down as editor and hand over to her deputies or to anyone who wishes to take over this role.

Minutes from ASL Executive Teleconference

5 May 2014

Present: J. Moir (ASN), B. Robson, R. Marchant, E. Harrison, F. Sheldon, R. Lester, A. Steward, C. Bartholomaeus, B. Downes.

Apologies: D. Ryder, E. Garcia, G. Dunkerley, S. Strachan, D. Cortez

1. Darwin congress: Jacqui Moir reported that a draft programme is available on the conference web site. So far 258 have registered and it is thought that the final number will be about 300. Two workshops will be held on the Sunday before the congress starts: one will be concerned with water quality; the other will be a student workshop. The welcome function will be held at parliament house. The production of the congress handbook has started but it will be some weeks before this is complete.

2. ASL Student judging: D. Ryder and F. Sheldon have graciously offered to organise this. An email will be sent to all non-student registrants asking for volunteers to assess students. The MFR prize will need to be judged across both ASL and ASFB students.

3. NSW seminar (organised by G. Dunkerley): unless a sufficient number of people show interest this event (planned for 16 May) will be cancelled.

4. Audit for financial year: R. Lester noted that the audit for the 2013-14 financial year will not be available for the AGM at the Darwin congress. The audit will have to be carried out later in the year and sent to members in an email and in the newsletter.

5. Newsletter editor: a new editor is needed as Sam Capon wishes to retire. Someone will have to be sought at the Darwin congress.

5. ASL medal rules: Belinda Robson proposed some amendments to the medal rules, which cover mentoring as a criterion to be considered by the medal committee. She had emailed these amendments to the executive and all agreed that these were worthwhile. The amendments do not exclude people, who have no opportunity for mentoring, from being considered for the medal. The modified rules will be added to the website.

6. Nominations for the ASL medal and 6. Science and Technology Australia (STA): B. Robson has written asking whether STA will represent the concerns of freshwater scientists, and ASL members in particular, to the Federal Government. She will report STA's response at the AGM in Darwin.

7. Second edition of Australian Freshwater Ecology: this book will be launched at the congress in Darwin. Andrew Boulton, on behalf of the authors, has written to the society thanking it for the financial contribution that enabled a graphic artist to be employed to produce the figures in the book. R. Marchant will read this letter to members at the AGM.

The “21st Century Watershed Technology: Improving Water Quality and the Environment” conference will bring together engineers, managers, researchers, producers, politicians, and other professionals in agricultural and environmental industries to exchange information, discuss opportunities, and address challenges of water quality programs.

The technical presentations (Nov. 3-7, 2014) in this conference will include information on a broad range of issues such as watershed management, field and watershed scale modeling, water quality standards, agricultural best management practices (BMPs), emerging problems highlighted by new water quality/quantity case studies, political ramifications of water quality/quantity, education in water resources, impact of extreme weather conditions on water quality and quantity, biological monitoring for water quality/quantity projects, solutions for increasing stakeholder involvement in the water quality/quantity process, economic implications of water quality/quantity, watershed implementation planning, water quality issues for forest and rangelands, education in water resources, and many other related topics.

There will be two days of hands on workshops (Saturday and Sunday, Nov. 1 and 2, 2014) including: 1) Water supply, pond design and levee pond economic analyses; 2) Nutrient Tracking Tool-NTT); 3) Comprehensive Economic and Environmental Optimization Tool – SWAT/ Agricultural Policy / Environmental eXtender (APEX) / Farm Economic Model (FEM) program (CEEOT-SWAPP). A number of technical and cultural tours will be available for conference participants and their family throughout the conference.

I extend a warm invitation to you to attend the first “21st Century Watershed Technology: Improving Water Quality and the Environment” conference in the beautiful city of Hamilton, NZ. Please plan on being a part of this conference to learn about new science and technologies and meet people who share the same interests in water quality and the environment.

David Hamilton

Organizing Committee

Ali Saleh	TIAER, Tarleton State University	USA
Fedro Zazueta	UFIT, University of Florida	USA
Mark Walbridge	USDA-ARS	USA
Clive Howard-Williams	NIWA	New Zealand
David Hamilton	University of Waikato	New Zealand
Lea Boodee	onCue Conferences	New Zealand

Reports from the trenches...



Australian Rivers Institute

International News

It's been a big few months of travel for the institute. In April, Professors Bunn, Olley and Burford visited a range of research institutions in China to discuss current and potential future collaborations. Workshops were held at Beijing Normal University in Beijing, and three Chinese Academy of Sciences departments in Wuhan: Wuhan Botanical Garden, the Institute of Hydrobiology, the Institute of Hydroecology, as well as the Changjiang Water Resources Commission. Presentations were given at each institution on ecological studies of tropical and arid rivers and floodplains, studies of algal ecology in reservoirs and optical dating and other techniques used to trace sediments in southeast Queensland. The workshops involved key researchers; environmental managers and many students at each institution.

ARI were lucky enough to have a large representative contingent at the Joint Aquatic Sciences Meeting (JASM) held in Portland, Oregon from the 18-23rd of May. Our Director Stuart Bunn was invited to give a plenary talk entitled 'The Global Water Crisis: Is freshwater ecology effectively informing the debate?' Stuarts

communicative yet though provoking talk, was just one of the many highlights of a busy and informative meeting that provided exciting collaboration and networking opportunities.

Moving a little further south from Portland, Nick Bond has recently returned from an exciting month in South America where he was busy working with the Peruvian Government on environmental flows planning. More specifically, Nick was advising local officials about the hydrology of dams and their effects on local shrimp farming.

Research News

In creative news, internationally acclaimed artist Leah Barclay has been awarded one of only four Australian Network for Art and Technology (ANAT) Art/Science residencies. She will work with Simon Linke, Toby Gifford and Jon Olley to explore new methods for acoustically monitoring three Queensland river systems in both an artistic and scientific sense.

Mark Kennard and Michele Burford recently participated in the Northern Australian Futures Roundtable in Darwin and hosted by the Kimberley to Cape initiative (www.kimberleytocape.net.au). Over 80 people participated from ~50 organisations representing agricultural, tourism, NRM, Indigenous, pastoral, finance, mining, oil/gas, conservation, research and government sectors. A key outcome of the Roundtable was that all sectors represented have a strong interest in working together to support development and conservation across Northern Australia that maintains natural and cultural values and strengthens communities. There is also a strong desire to share ideas and opportunities across sectors and to continue conversations and collaborations to achieve an economically resilient and environmentally sustainable future for the North.

Student News

Australian Rivers Institute students from Nathan and Gold coast campuses recently attended the Third Annual Marine and Freshwater Research Student Symposium on beautiful Stradbroke Island. The event was hosted by the SEQ branch of the Australian Marine Sciences

Association (AMSA) at the Moreton Bay research station at Dunwich. Inspiring discussions on popularizing science, careers in science and presentation skills were facilitated by Andrew Boulton (UNE) and Peter Rothlisberg (CSIRO). PhD candidate Jack Coates-Marnane said it was great to meet researchers and students from across Australia in such a great setting, and undoubtedly students are already eagerly anticipating the next AMSA student event.

PhD student Harmony Patricio spent six weeks collecting samples for her thesis research throughout the Mekong River Basin, in Thailand, Laos, and Cambodia. She is using environmental DNA (eDNA) to determine presence/absence and fish species diversity in specific locations throughout the river. By filtering water samples, she extracts cells that have recently been shed into the environment by fish at the sampling location. She conducted the sampling in deep pools within the river, which are thought to be important dry season refugia. One of the pools is over 70 meters in depth, and there is currently very limited data on the relative importance of specific deep pools for rare fishes.

For a little self-promotion, I was lucky enough to attend a three day Spatial Statistical Stream Network Modelling workshop in Boise, Idaho. This was hosted by Dan Isaak of the US Forest Service, Erin Peterson of CSIRO and Jay Ver Hoef of NOAA, and provided an opportunity to become familiar with the ArcGIS and R packages created specifically for spatial modelling on dendritic stream networks.

And finally, we have had a new influx of postgraduate students who have commenced in the last few months. Dayani Gunathilaka, from Sri Lanka is studying the impact of climate change on tea (*Camellia sinensis*) productivity, price volatility and ecosystem service delivery (supervised by Jim Smart). Thuc Phan will be investigating integrated water resources management in coastal area under climate change impacts, specifically focussing around the city of Hai Phong in Vietnam. Thuc is also supervised by Jim Smart along with Sam Capon and Wade Hadwen. Xiaoguang Ouyang, from China, commenced at the Gold Coast campus and will be looking into harnessing

the carbon sequestration potential of mangroves in urban estuaries through environmental manipulation, and is supervised by Joe Lee. Aaron Fogel, from the USA will be using ground penetrating radar to search for archaeological sites to investigate early Aboriginal migration patterns (supervised by Jon Olley). Md Rakeb-Ul Islam, from Bangladesh has commenced at the Nathan Campus and is supervised by Jane Hughes. Finally, honours student Jack McCann is studying larval dynamics of Australian bass (supervised by Mark Kennard and Fran Sheldon). A big welcome to all and we look forward to hearing more about their research in the near future.

That's all for now, until next time....

Mischa Turschwell and Fen Guo



eWater turned two years old on 1 July! We have been operating as a stand-alone, not for profit business since eWater CRC finished on 30 June 2012. However, we still enter into collaborative R&D arrangements aiming to bring science into policy, and we still strive to incorporate the latest research into our software and associated products. Several former CRC researchers continue to contribute new knowledge, algorithms and code to our modelling software, including Nick Marsh (YoRB), Matt Hardy (BoM), Tim Fletcher (UMelb) and many researchers at CSIRO.

eWater has about 30 staff, a mixture of hydrologists, scientists, software developers and support staff, mostly based in Canberra, and in the same building as before but with more offices. Over the two years, the faces at eWater have changed quite a lot, and not just because we are older! Apart from those of us who were in eWater CRC, namely Gary Jones, Felicity Paul, Geoff Davis, James Robinson, Jo Smith and Ralph Ogden, several hydrologists and software developers have joined us. Among the new faces are hydrologists Geoff Adams (ex MDBA, CSIRO and Goulburn-Murray Water), Juanita Moolman (ex Bureau of Meteorology, ESRI and S.

Africa), Ashis Dey (ex Cardno/XP), and Karina Redpath (ex Cardno (Qld)).

Our single biggest task is supporting eWater Source as the COAG-endorsed National Hydrological Modelling Platform. There are now over 100 Source modelling applications running across Australia and in South and South-East Asia, and the number of users is growing by the week. Of course, the many other stand-alone software models and applications developed by eWater CRC its predecessors, including MUSIC, AUSRIVAS, and the 'Eco Tools' (eflows) suite are still available, all except MUSIC free of charge, on the eWater Toolkit web site (<http://www.ewater.com.au/products/ewater-toolkit>).

We are increasingly working in a technical capacity-building role, helping others to become skilled eco-hydrological modellers. This work includes providing training courses in understanding river basin management and in applying our software for that and other purposes, both in Australia and in Asia. All of this to support our not-for-profit mission to support ecologically-sustainable water management in Australia and around the world.

Gary Jones

Congratulations to Ashley Murphy and Emma Razeng who have recently completed their confirmations. Whilst it has been a busy few months in the lab, Ashley Murphy and Nick Moran had a fruitful and eventful field trip to sites in the western Lake Eyre Basin to collect fish tissue samples.

Mel Klamt, Ashley and Emma all presented preliminary results at the Joint Aquatic Sciences Meeting in Portland, USA, and are now busy preparing for their ASL talks after returning from their respective US adventures – chasing wildlife and wilderness. The Joint Aquatic Sciences Meeting was a fantastic experience which offered networking opportunities and a chance to catch up with the University of Canberra IAE crew and Darren Giling (now Dr Daz!) who has recently started his post doc position at IGB in Germany.

Whilst a few of us were roaming the US, Nick Moran and Fariba Pakdel were back at Monash working hard in the lab. Nick has begun a new round of behavioural trials on several populations of desert gobies, whilst simultaneously processing stable isotope samples to try and construct a food web for

those goby's aquatic communities.
#beardedsience is going strong!

Susie Ho has been busy teaching and assisting student Tom Wilkins in setting up experimental mesocosms, where Tom will be examining predator effects on carbon flux. Sally Hladyz has been busy in the lab processing samples and analysing data looking at how environmental flows benefit the Goulburn River.

We look forward to catching up with everyone at the ASL/ASFB conference. Teresa Mackintosh will be bringing along our latest (honourary) lab member Florence to Darwin for you all to meet and greet. Please also remember to check out the special session around science communication Susie Ho and Krystina Mössop have been developing.



Murray Darling
WETLANDS
WORKING GROUP LTD.

Murray Wetland Carbon Storage Project

The frantic countdown to the end of the financial year milestones due, invoices to be raised/paid and report deadlines, don't you just love it?

Since the last newsletter, Sarah Ning has been travelling the project target area for Investment Program Round 1, continuing to liaise with contractors and landholders. Fencing has been completed at 80% of the sites (20 km in length) with two sites to be completed in late spring/early summer as currently too wet. A meeting with the fencing contractor to review delivery and lessons learnt from the fencing works has been undertaken. Revegetation works (direct seeding and tubestock planting) are being undertaken; 60% of direct seeding has been completed with planting of tubestock planned for last week of June. Other on-ground works (e.g. alternative watering point, signage, bird hides, nest boxes, car parking and engineering works) are progressing. Property Vegetation Plans have been finalised and signed by the landholders and are awaiting approval by Murray LLS.

The Wetland Champion process has commenced with Expression of Interest forms distributed, most landholders indicating an interest to be involved in the Project Steering Committee,

media appearances, attending/hosting awareness raising events and being a community contact person within their region for the project. They have also indicated their willingness to participate in the CSIRO project answering questions relating to the delivery of the wetland project (interviewed by Cathy Robinson).

NSW Rates Notices were recently distributed, accompanied by the 'LLS Newsletter'. The newsletter featured a section 'How are we helping?' where there is a short article about the Murray Wetland Carbon Storage project.

Murray LLS and MDWWG have recently signed a 12-month interim contract to continue delivery of activities, with option for additional fund provision for deliverables if/when security of Biodiversity fund grant is assured.

Sarah and Nicky Bruce (Murray LLS) will be jointly presenting a paper on Wetland Management in an Agricultural Landscape at the joint ASFB and ASL Congress. Sarah will also have on hand copies of the RIVERSPACE postcard, outlining the objectives of this joint project between the Australian River Restoration Centre and the Murray Darling Wetlands Working Group Ltd.

Sarah attended a paddock walk and talk event on the 'ABC' of soil carbon management on 17 June at Bungowannah, west of Albury. The event involved a talk from Gwyn Jones, Biological Agronomist and a visit to nearby farm paddocks where a number of innovative management techniques were being applied to improve soil carbon. The important role of earthworms and dung beetles were also discussed and it was highlighted that a reduced application of chemicals, along with a considered application of nutrients, can lead to improvements in soil carbon and greater farm productivity.

Carrs, Cappitts and Bunberoo (CCB) Creeks system 2013/14 Project Delivery

In conjunction with the Western Local Land Services, Rhonda Sinclair is finalising delivery on the Project and Planning approvals pathways for the proposed infrastructure works at the CCB Creeks system.

Cheers,

Rhonda Sinclair

Jenny Davis recently gave a very interesting talk on her arid zone research at the ASL/ASFB ACT pub night held at Zierholz @ UC (see the picture below). The nights continue to be well attended by people from a range of organisations (average attendance is 20-25 people!). Keep an eye out for the next night!

Evan Harrison, Adrian Disting, Ross Thompson, Sue Nichols, Michael Peat, Sue Powell, Jenny Davis and Clarissa Barbosa recently attended the Joint Aquatic Sciences Meeting in Portland, USA. The meeting had over 3000 attendees with lots of interesting papers being delivered by delegates from the Society for Freshwater Science, Society for Wetland Science, Association for Sciences of Limnology and Oceanography, and Phycological Society of America. After the meeting Evan Harrison and Adrian Disting visited the University of British Columbia, where they went on a field trip with Liz Perkin from UBC to inspect the Malcom Knapp Research Forest (nothing like in Australia – a large forest devoted to research!!). The forest is used by John Richardson's Stream and Riparian Research Laboratory at UBC for several studies addressing questions related to the mechanisms that structure stream and riparian area communities, and how various land-use practices affect those systems.



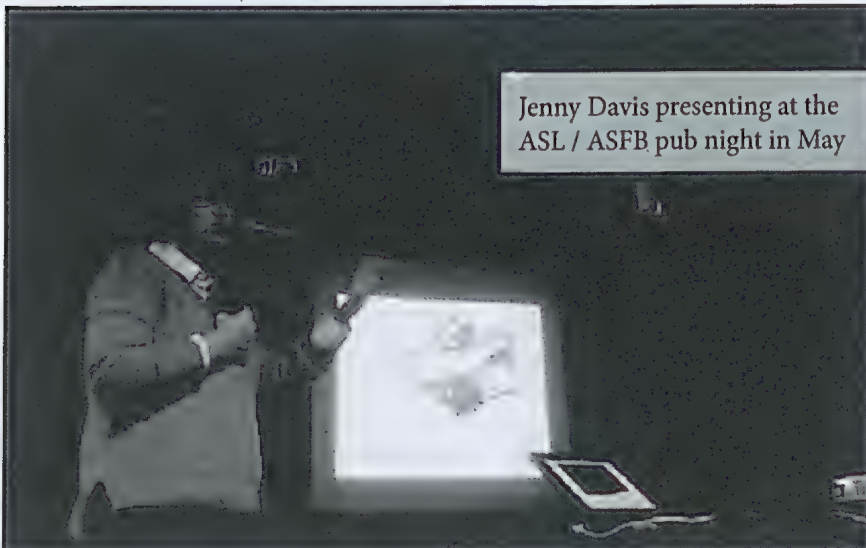
UNIVERSITY OF CANBERRA



INSTITUTE FOR APPLIED ECOLOGY

In an effort to involve more Murray cod fishers in citizen science data collection regarding their favourite species, Alan Couch released a smartphone application to collect basic data about current and historical catch records and photos. The app, called Maccullochella, is available for the IOS and Android devices from the Apple iTunes App store and Google play respectively. If you don't need the app but have an interest you can read about the app here: <http://maccullochella.blogspot.com.au/p/maccullochella.html>

Summary data will be made available for all to share at <http://maccullochella.blogspot.com.au/p/cod-app-data.html>, and raw data (with privacy relevant data redacted) will be available for anyone who is interested on request. Of course the data will be heavily skewed to first users and population centres for some time and should be considered only with that in mind. Alan hopes that the app will foster interest in the species and it's habitat even if the data collection is rudimentary.



Prue McGuffie is currently processing Macquarie perch young of year fish for daily aging and back calculation of spawning date. She will compare spawning date with adult acoustic telemetry data and environmental variables, results coming soon. Adult acoustic tagging in both the Abercrombie and Murrumbidgee will begin in August if anyone is interested in checking out fish surgery!! Also she is very much looking forward to ASL/ASFB in Darwin.

Daniela Cortez is looking forward to continuing her PhD at the Institute of Applied Ecology from August this year. She will be continuing her work assessing the impact of water abstraction on unregulated coastal rivers under the supervision of Ben Kefford and Ross Thomson.

Felix Sauer (supervised by Ben Kefford) has started to get the first results

from his study determining the influence of salinity (caused by coal mining and dryland) on the breakdown rate of leaves. The results show a lower rate of leaf breakdown with increasing salinity. The salinity caused by a coalmine does not appear seem to have as stronger effect to leaf breakdown as dryland salinity.

Sally Hatton has collected most of her fish diet data now from the initial filling of the Enlarged Cotter Reservoir. She is not looking forward to sitting at the computer for the next few months analysing, although that could be a blessing in the Canberra winter.

Adrian Dusting has also become a UC legend after recently featuring in the University of Canberra's Monitor magazine.

Evan Harrison

We have had a productive start of the year at the Centre for Environmental Sustainability, University of Technology, Sydney.

Simon Mitrovic's group is continuing work on a broad range of topics including environmental flows, dissolved organic carbon and algal blooms. Alec Davie has recently had a paper accepted in Marine and Freshwater Research on the effectiveness of environmental flows from Pindari Dam at scouring benthic algae. Stefanie Mueller has submitted her PhD thesis on cyanobacterial growth in a drinking water reservoir in the Hunter and has an article under

revision in *Hydrobiologia* titled "Co-limitation by nitrogen and phosphorus dominates in a shallow reservoir". James Hitchcock has recently presented his PhD research on freshwater inflows and estuarine zooplankton at the ASLO ocean sciences meeting in Hawaii and has a paper under revision in *Estuarine Coastal and Shelf Science* titled "Highs and lows: estuarine carbon and nutrient dynamics during differently sized inflow events". Ann-Marie Rohlf is about to submit a paper on the role of tributaries in delivering organic carbon to the Snowy River with Simon Williams of the Office of Water and is busily running some lab experiments and collecting field data.



Rebecca Wood has just published a paper in *Science of the Total Environment*, co-authored with Simon Mitrovic and Ben Kefford titled: "Determining the relative sensitivity of benthic diatoms to atrazine using rapid toxicity testing: a novel method" and has will soon be submitting a second article co-authored with Simon Mitrovic, Richard Lim and Ben Kefford titled "Does herbicide mode of action alter the relative sensitivity of benthic diatoms?". Richard Carney is progressing with his PhD research on bacterioplankton responses to flow and carbon supervised by Simon and Justin Seymour and is about to submit a paper from his honours on bacterioplankton species changes as a result of flow events. Rachel Gray is continuing her Masters work on cold water pollution at Burrendong Dam and recently presented to the NSW Cold Water Pollution Inter Agency Group. Steven Leahy has picked up a job as a research chemist after recently being awarded a University Medal for his First Class Honours thesis on antimony in estuaries working with Simon Apte of CSIRO. Carla Thomas is finalising her Honours thesis with Simon, Anne Colville and David van Reyk examining algal toxins on terrestrial

plants. Khai Siang Ow is visiting UTS from Nanyang Polytechnic, Singapore to do a 12-week internship with Simon Mitrovic. He has been kept very busy learning about cyanobacteria with Anne Colville, and is getting a taste of wilder Australia on field trips up the Snowy River with Ann-Marie Rohlf, and to Lake Burrendong with Rachel Gray.

M. Azizur Rahman is continuing his work on biotransformation of As by freshwater phytoplankton and ecology and trace element distribution in Japanese precious coral. David Nehme is progressing with his honours with Aziz Rahman, Lou de Filippis and Anne Colville, looking at the effects of arsenic species on growth, photosynthesis and oxidative stress on the freshwater phytoplankton, *Chlorella* sp. Anne Colville, Lou de Filippis and Aziz Rahman are also working with Thuy Chung Nguyen, a PhD student from Engineering, on a project using a range of toxicity tests to study road dust and runoff. Renee Dowse will soon be submitting her thesis on salt ecotoxicology and risk assessment, she is then off to Rhodes University in Grahamstown, South Africa, where she has a Post-doctoral position in Freshwater Ecotoxicology.

ASL experts

Prof A. Arthington: in stream flows, ecology of exotic fishes, conservation of rare fishes. Australian Rivers Institute, Griffith University, Nathan QLD 4111. Phone (07) 3875 7403, Fax (07) 3875 7615, email: a.arthington@mailbox.gu.edu.au

A/Prof P. Boon: bacteriological issues, wetlands. Environmental Management, Victoria University of Tech., PO Box 14428 MMC, VIC 3000. Phone (03) 9365 2214, Fax (03) 9365 2465, email: paul.boon@vu.edu.au

Dr K.Bowmer: pesticides - fate and ecological impact, aquatic plant management. Charles Sturt University, PO Box 588, Wagga Wagga, NSW 2678. Phone (02) 6933 2221, Fax (02) 6933 2060, email: kbowmer@csu.edu.au

Dr M. Brock: temporary wetlands, aquatic plants. 47 Brightwater Rd, Blackmans Bay, TAS 7052. Phone (03) 6227 1812, mobile 0429721416, email: brock.margaret@gmail.com

Prof. S. Bunn: stream ecology, ecology of riparian zones, biomonitoring. Australian Rivers Institute, Griffith University, Nathan, QLD 4111. Phone (07) 3735 7407, Fax (07) 3735 7615, email: s.bunn@griffith.edu.au

Dr M.Casanova: charophytes, temporary wetlands. 273 Casanova Rd Westmere, VIC 3351. Phone (03) 5350 2111, email: amcnova@netconnect.com.au

Prof J.Davis: wetland and stream ecology, ecology of central Australian waterbodies. Department of Biological Sciences, PO Box 18, Monash University, Clayton VIC 3800. Phone (03) 9905 1063, email: Jennifer.Davis@sci.monash.edu.au

Prof. P. De Deckker: salt lakes: biology, chemistry and history; palaeolimnology towards understanding past environmental change. Dept. of Earth & Marine Sciences, The Australian National University, Canberra ACT 0200. Phone (02) 6125 2070, Fax (02) 6125 5544, email: patrick.dedeckker@anu.edu.au

Dr. M. Douglas: tropical freshwater ecology, intermittent streams, tropical floodplains. School of Biological and Environmental Sciences, Northern Territory University, Darwin, NT 0909. Phone (08) 8946 7261, Fax (08) 8946 6847, email: michael.douglas@ntu.edu.au

Dr S.Eberhard: groundwater dependent ecosystems (subterranean fauna), caves and karst. Subterranean Ecology, Scientific Environmental Services, Greenwood, WA. Phone (08) 9203 9551

Dr M. Finlayson: wetland ecology and management; mining and agriculture impacts; inventory and assessment, Ramsar convention. Institute of Land, Water and Society, Charles Sturt University, Albury NSW. Phone (02) 6051 9779, email: mfinlayson@csu.edu.au

Dr A. García: taxonomy, ecology, biology and biogeography of extant and fossil charophytes. School of Earth and Environmental Sciences, University of Wollongong, NSW 2522. Phone (02) 4221 5966, Fax (02) 4221 5703, email: adriana@uow.edu.au

A/Prof M.Grace: nutrient cycling and biogeochemical processes. Chemistry Department, Monash University, Clayton, VIC 3800. Phone (03) 9905 4078, Fax (03) 9905 4196, email: michael.grace@sci.monash.edu

Dr T. Grant: platypus biology. Biological Science, University of NSW, PO Box 502, Cronulla, NSW 2230. Phone (02) 9527 2862, Fax (02) 9527 2862, email: t.grant@unsw.edu.au

Associate Professor M. Greenway: Constructed wetlands, Melaleuca wetlands, biogeochemical processes. School of Environmental Engineering, Faculty of Environmental Engineering, Griffith University, Nathan QLD 4111. Phone (07) 3875 7486, Fax (07) 3875 7404, email: m.greenway@mailbox.gu.edu.au

K. Hortle: Fisheries and environment, impact of mining, impact of development in SE Asia and PNG on rivers. 23A Waters Grove, Heathmont VIC 3135. Phone (03) 9720 5891, email: kent_hortle@bigpond.com

A/Prof P. Horwitz: conservation of freshwater invertebrates. Centre for Ecosystem Management, Edith Cowan University, Joondalup Drive, Joondalup, WA 6027. Phone (08) 9400 5558, Fax (08) 9400 5070, email: phorwitz@cowan.edu.au

Prof. P.S. Lake: stream ecology, conservation freshwater biota. Department of Biological Sciences, PO Box 18, Monash University, Clayton, VIC 3800. Phone (03) 9905 5653, Fax (03) 9905 5613, email: sam.lake@sci.monash.edu.au

Dr C. McCullough: mine water remediation and management, mining pit lakes, acid mine drainage, acid sulfate soils, ecotoxicology. Edith Cowan University, 270 Joondalup Drive, Joondalup WA 6027. Phone (08) 6304 5143, email: c.mccullough@ecu.edu.au

Dr V. Matveev: plankton food webs, biomanipulation. CSIRO Land and Water, 80 Meiers Road, Indooroopilly, QLD 4068. Phone (07) 3214 2755, Fax (07) 3214 2881, email: vlad.matveev@csiro.au

K. Muller: constructed wetlands, wetlands of the lower Murray. River Murray Catchment Water Management Board, 1 Colman Tce, Strathalbyn SA 5255. Phone (08) 8536 8125, Fax (08) 8536 8126, email: kerri_muller@triplei.com.au

Dr R. Pearson: tropical freshwater ecology. School of Tropical Biology, James Cook University, Townsville, QLD 4811. Phone (07) 4781 5466, Fax (07) 4781 5511, email: richard.pearson@jcu.edu.au

Dr P. Pollard: microbial ecology. Australian Rivers Institute, Griffith University, Nathan QLD 4111 Phone (07) 3875 6597, Fax (07) 3875 7404, email: p.pollard@griffith.edu.au, web: www.microbialecolology.org

Dr W. Ponder: taxonomy, biogeography and biology of freshwater mollusca. Invertebrate Zoology, Australian Museum, 6 College St, Sydney NSW 2001. Phone (02) 9320 6120, Fax (02) 9320 6050, email: winstonp@amsg.austmus.gov.au

Dr M. Serena: platypus ecology and conservation. Australian Platypus Conservancy, PO Box 84, Whittlesea VIC 3757. Phone (03) 9716 1626, Fax (03) 9716 1664, email: platypus@vicnet.net.au

Dr B. Sherman: reservoir management, cold water pollution and algal blooms. CSIRO Land & Water, Water Quality and Environmental Flows, GPO Box 1666 Canberra ACT 2601. Phone (02) 6246 5579, email: brad.sherman@csiro.au

Prof. R. Thompson: food web ecology, stream and lake ecology, climate change effects on aquatic habitats. Institute for Applied Ecology, University of Canberra. Phone (04) 3053 4094 Email: ross.thompson@canberra.edu.au

Dr B. Timms: lake geomorphology, coastal dune lakes, arid zone wetlands. Australian Wetlands and Rivers Centre, BEES, University of NSW, Sydney NSW 2052. Email: brian.timms@unsw.edu.au

Dr L. Townley: groundwater-surface water interactions. Townley & Associates Pty Ltd, PO Box 425, Claremont WA 6010. Phone (08) 9389 6377, Fax (08) 9389 6477, email: LTownley@Townley.com.au

ASL membership

I would encourage all ASL members to visit: www.asl.org.au for information on membership and contact ASN if necessary to bring your account up to date and make any changes necessary to your details. To attend the conference at member rates you must be a financial member valid until June 2014.

If your current membership expired June 2013 you will need to renew your membership in order to receive the member rates for the 2014 joint Congress. Non-member registration fees are well above the ASL membership fee and will not result in an ASL membership as per previous years..

If you think your membership has expired or you need confirmation of your status, please contact Jacqui Moir at ASN Events (jm@asnevents.net.au) or phone 03 59 832 400.

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School of Environmental Science
South Street campus, Murdoch University
90 South Street, Murdoch, Western Australia 6150
Ph: +61 8 9360 2417
Email: B.Robson@murdoch.edu.au

Vice-President

Assoc. Prof. Fran Sheldon
Australian Rivers Institute,
Nathan campus, Griffith University,
170 Kessels Road QLD 4111, Australia
Ph: +61 7 373 53914
Email: f.sheldon@griffith.edu.au

Immediate Past President

Assoc. Prof. Darren Ryder
Dept Ecosystem Management
University of New England, Armidale NSW 2351
Ph: + 61 2 6773 5226
Email: dryder2@une.edu.au

Secretary

Dr Richard Marchant
Museum Victoria, GPO Box 666E
Melbourne VIC 3001
Ph: +61 3 8341 7433
Email: rmarch@museum.vic.gov.au

Treasurer

Dr Rebecca Lester
School of Life and Environmental Sciences
Deakin University, Warrnambool, VIC 3280
Ph: +61 3 556 33330
Email: rebecca.lester@deakin.edu.au

State representatives

Australian Capital Territory

Evan Harrison

Institute of Applied Ecology

University of Canberra, Canberra, ACT

Email: evan.harrison@canberra.edu.au

New South Wales

Gillian Dunkerley

NSW Office of Environment and Heritage Sydney, NSW

Email: Gillian.dunkerley@environment.nsw.gov.au

Northern Territory

Erica Garcia

Charles Darwin University, Darwin, NT

Email: Erica.garcia@cdu.edu.au

Queensland

Alisha Steward

Australian Rivers Institute, Griffith University, QLD

Email: alisha.steward@griffithuni.edu.au

South Australia

Michelle Bald

Department for Water, Adelaide, SA

Email: michelle.bald@sa.gov.au

Tasmania

Regina Magierowski

University of Tasmania, Hobart, Tasmania

Email: reginam@utas.edu.au

Victoria

Barbara Downes

University of Melbourne, Parkville, VIC 3010

Email: barbarad@unimelb.edu.au

Western Australia

Scott Strachan

Murdoch University, Perth, WA 6150

Email: s.strachan@murdoch.edu.au

Student representatives

Teresa Mackintosh
Australian Centre for Biodiversity and School of Biological Sciences
Monash University, Clayton, VIC 3800.
Email: Teresa.mackintosh@monash.edu

Daniela Cortez
University of Technology, Sydney, NSW
Email: Daniela.Cortez@uts.edu.au

Sally Hatton
Institute for Applied Ecology
University of Canberra, Canberra, ACT
Email: sally.hatton@canberra.edu.au

Caitlin Bartholomaeus
Murdoch University, WA
Email: c.bartholomaeus@murdoch.edu.au

The Australian Society for Limnology Inc. (ASL) is an Australian based scientific society whose focus is the study and management of inland waters. The ASL was established in 1961, and has a current membership of over 650 researchers, managers, engineers, teachers and tertiary level students from all states and territories. Members have a strong professional interest in inland aquatic issues, including the maintenance of biodiversity, the maintenance and/or restoration of water quality, and the wise use of aquatic resources. The Society also has a strong interest in fostering the scientific and intellectual development of tertiary students.

The Society includes members working in government agencies, tertiary institutions and many industries related to aquatic resources. Through their daily activities, members have contact with local communities and are in a sound position to interpret and advise on inland water issues. The Society has a substantial knowledge base, and has assumed a responsibility to ensure that this is available to those who manage inland waters.

Accordingly, the charter of the ASL is to further our understanding of Australia's inland waters and to promote their wise use and sustainable management. In this manner we will contribute to the continued existence of this valued resource and the maintenance and enhancement of the quality of life for all Australians. The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

www.asl.org.au

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